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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

RAO, SHRINIVAS H

ART UNIT

PAPER NUMBER

2814

DATE MAILED: 04/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/893,964

Applicant(s)

LEE ET AL.

Examiner

Steven H. Rao

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE \_\_\_\_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☐ Claim(s) \_\_\_\_ is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_ 6) ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Priority***

Receipt is acknowledged of paper submitted under 35 U.S.C. 119(a)-(d) from Korean Patent Application No. 2000-46621 filed on August 11, 2000, which papers have been placed of record in the file.

### ***Drawings***

The drawings filed on June 29, 2001 have been accepted by the draftsman.

### ***Information Disclosure Statement***

Acknowledgment is made of receipt of Applicant's Information Disclosure Statement (PTO-1449) filed on June 29, 2001 and October 04, 2001.

The references on PTO 1499 submitted on 6/29/01 and 10/04/01 are acknowledged. All the cited references have been considered. However the foreign patents and documents cited by applicant are considered to the extent that could be understood from the abstract and drawings.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1,3 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Lee et al. (U.S. Patent No. 5,946,066, hereinafter Lee).

With respect to claim 1 Lee describes a liquid crystal display device comprising: a plurality of gate lines ( Lee fig. 3 A # 11, col.2 line 41-42) a plurality of data lines, crossing said gate lines, such that at least one pixel region is defined by the data and gate lines, ( fig. 3 A # 12, col. 2 lines 42-45) at least one of said data lines defining the pixel region having a first data line section and a second data line section, the first data line section and the second data line section intersecting at a data line bent portion ( fig. 3A # 12 is bent) at least one data electrode in the pixel region, the data electrode having a first data electrode section and a second data electrode section, the first data electrode section and the second data electrode section intersecting at a data electrode bent portion; ( Lee figure 3a # 13, col. 2 lines 60-65) at least one common electrode in the pixel region, the common electrode having a first common electrode section and a second common electrode section, the first common electrode section and the second common electrode section intersecting at a common electrode bent portion; ( Lee fig. 3 A #14, col. 2 lines 58-61) and at least one common line in the pixel region ( Lee col.2 lines 63-64), the common electrode crossing the data lines, the data electrode, and the common electrode. ( Lee figs. 3a, b etc.).

With respect to claim 3 Lee describes the liquid crystal display device of claim 1, wherein the common line is substantially parallel to the gate line. ( Lee figs. 3 a,b).

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With respect to claim 8 Lee describes the liquid crystal display device of claim 1, wherein the data electrodes partially overlap at least one of the gate lines. (Lee figs. 3 a, b).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 4-7 and 9 to 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (U.S. Patent No. 5,946,066, hereinafter Lee) as applied to claim 1 above and further in view of Asada et al. (U.S. Patent No. 5,745,207, herein after Asada).

With respect to claim 2, Lee describes the liquid crystal display device of claim 1. wherein the common line crosses the data line at the data line bent portion. ( Lee 3b # 11 intersecting 12, col. 2 lines 42-44).

Lee does not specifically state the common line crosses data electrode at the data electrode bent portion, and the common electrode at the common electrode bent portion.

However, Asada in Figure 3 and col. 6 lines 56-65 describes the common line crosses data electrode at the data electrode bent portion, and the common electrode at

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the common electrode bent portion to compensate the coloring corresponding to the angle of view and the total non-display area can be reduced.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to include Asada's arrangement of the common line crosses data electrode at the data electrode bent portion, and the common electrode at the common electrode bent portion. In Lee's device to compensate the coloring corresponding to the angle of view and the total non-display area can be reduced. ( Asada col. 3 lines 60- to col. 4 lines 5).

With respect to claim 4 Lee describes the liquid crystal display device of claim 1, wherein the first data line section, the first data electrode section, and the first common electrode section are substantially parallel. ( Lee figures 3 a,b).

With respect to claims 5 to 7 Lee describes the liquid crystal display device of claim 1, wherein the common lines , data electrodes and common electrodes comprise a transparent conductive material ( Asada col. 1 line 34-35).

With respect to claim 9 Lee describes the liquid crystal display device of claim 1, wherein a storage capacitor is formed where the common line crosses the data electrode. ( Asada col. 1 line 40).

With respect to claim 10 Lee describes a liquid crystal display device comprising: a plurality of gate lines; a plurality of data lines, crossing said gate lines, such that at least one pixel region is defined by the data and gate lines, at least one of said data lines defining the pixel region, the data lines having a plurality of data line segments, the

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data line segments intersecting at data line bent portions; at least one data electrode in the pixel region, the data electrode having a plurality of data electrode segments, the data electrode segments intersecting at common electrode bent portions; and at least one common electrode in the pixel region, the common electrode having a plurality of common electrode segments, the segments intersecting at common electrode bent portions; and at least one light shielding layer on the pixel region, the data electrode, and the common electrode at respective ones of the data line bent portions, the data electrode bent portions and the common electrode bent portions. (rejected for the same reasons as claims 1-9 above).

With respect to claim 11, Lee The device of claim 10, wherein one of the light shielding layers is a common line. (Lee col. 2 lines 63-65 and Asada col.5 line30)

With respect to claim 12 Lee describes An in-plane switching mode liquid crystal display device comprising: gate lines formed on a substrate; data lines having a plurality of bent portions to cross the gate lines, the data and gate lines defining a pixel region; a plurality of data electrodes and common electrodes having a plurality of bent portions; a common line on the bent portions of the data lines, the data electrodes and the common electrodes; and a plurality of auxiliary common lines on the bent portions of the data electrodes and the common electrodes. Rejected for same reasons as claims 1 and 10 above).

With respect to claim 13 Lee describes the device of claim 12, wherein the common lines are formed in parallel with the gate lines. ( Asada fig. 2,etc.).

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With respect to claims 14 to 16 Lee describes the device of claim 12, wherein the common lines, data electrodes and common electrodes include transparent conductive film. (rejected for the same reasons as set out under claims 5-7 above).

With respect to claim 17 Lee describes the device of claim 12, wherein at least one of the common lines is formed within the pixel region. ( rejected for the same reasons as stated under claim1 above).

With respect to claim 18 Lee describes the device of claim 12, wherein the data lines, the data electrodes, and the common electrodes have at least one bent portion. ( Lee figs. 3a,b)

With respect to claim19 Lee describes the device of claim 12, wherein the common lines are formed with the common electrodes. (Asada fig. 2 etc.)

With respect to claim 20 Lee describes the device of claim 12, wherein the data electrodes are connected with the gate lines. ( Lee col.2 lines 62-65, Asada fig. 2)

With respect to claim 21 Lee describes the device of claim 12, wherein the data electrodes overlap the gate lines.( Lee figs. 3a,b and Asada fig.2).

With respect to claim 22 Lee describes the device of claim 12, wherein the data and common electrodes are on different layers. .( Lee figs. 3a,b and Asada col.1 lines 41-65).

With respect to claim 23, Lee describes the device of claim 12, further comprising a light shielding layer on the bent portion between the data electrodes and the common electrodes. (Lee col. 2 lines 63-65 and Asada col.5 line30 ).



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With respect to claim 24 Lee describes an in-plane switching mode liquid crystal display device, comprising: gate lines on a substrate; data lines having a plurality of bent portions to cross the gate lines, the data and gate lines defining a pixel region; a plurality of data electrodes having a plurality of bent portions; common electrodes having a plurality of bent portions, the common electrodes being connected with each other at the bent portions; and common lines on the bent portions of the data lines, the data electrodes and the common electrodes. ( rejected for the same reasons as claims 1,10 and 12 above).

With respect to claim 25 Lee describes the device of claim 24, wherein the data electrodes are connected with the gate lines. ( Asada figure 2)

With respect to claim 26 Lee describes the device of claim 24, wherein the common electrodes are connected with the common lines. ( Asada figs. 2, 3)

With respect to claim 27 Lee describes the device of claim 24, wherein the data electrodes include a first electrode and a second electrode. ( Lee fig.3a,b etc. and Asada figs. 2)

With respect to claim 28 Lee describes the device of claim 27 wherein the first electrode has a plurality of bent portions. ( Lee fig.3a,b etc. and Asada figs. 2)

With respect to claim 29 Lee describes the device of claim 27, wherein the first electrode is connected with the second electrode. ( Lee fig.3a,b etc. and Asada figs. 2)

With respect to claim 30 Lee describes the device of claim 24, further comprising a light shielding layer on the bent portion between the data electrodes and the common electrodes. (Lee col. 2 lines 63-65 and Asada col.5 line 30).

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Any inquiry concerning this communication or earlier communication from the examiner should be directed to Steven H. Rao whose telephone number is (703) 306-5584. The examiner can normally be reached on Monday- Friday from approximately 7:00 a.m. to 5:30 p.m.


Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0956. The Group facsimile number is (703) 308-7724.



Steven H. Rao

Patent Examiner

April 05, 2003.



LONG PHAM  
PRIMARY EXAMINER